Service Schematics



RM-86 / RM-87

Introduction

IMPORTANT:

This document is intended for use by authorized NOKIA service centers only.

"Service Schematics" was created with focus on customer care.
The purpose of this document is to provide further technical repair information for NOKIA mobile phones on Level 3/4 service activities.
It contains additional information such as e.g. "Component finder".
The "Signal overview" page gives a good and fast overview about the most important signals and voltages on board.
Saving process time and improving the repair quality is the aim of this document.
It is to be used additionally to the service manual and other training or service information such as Service Bulletins.

All measurements were made using following equipment:

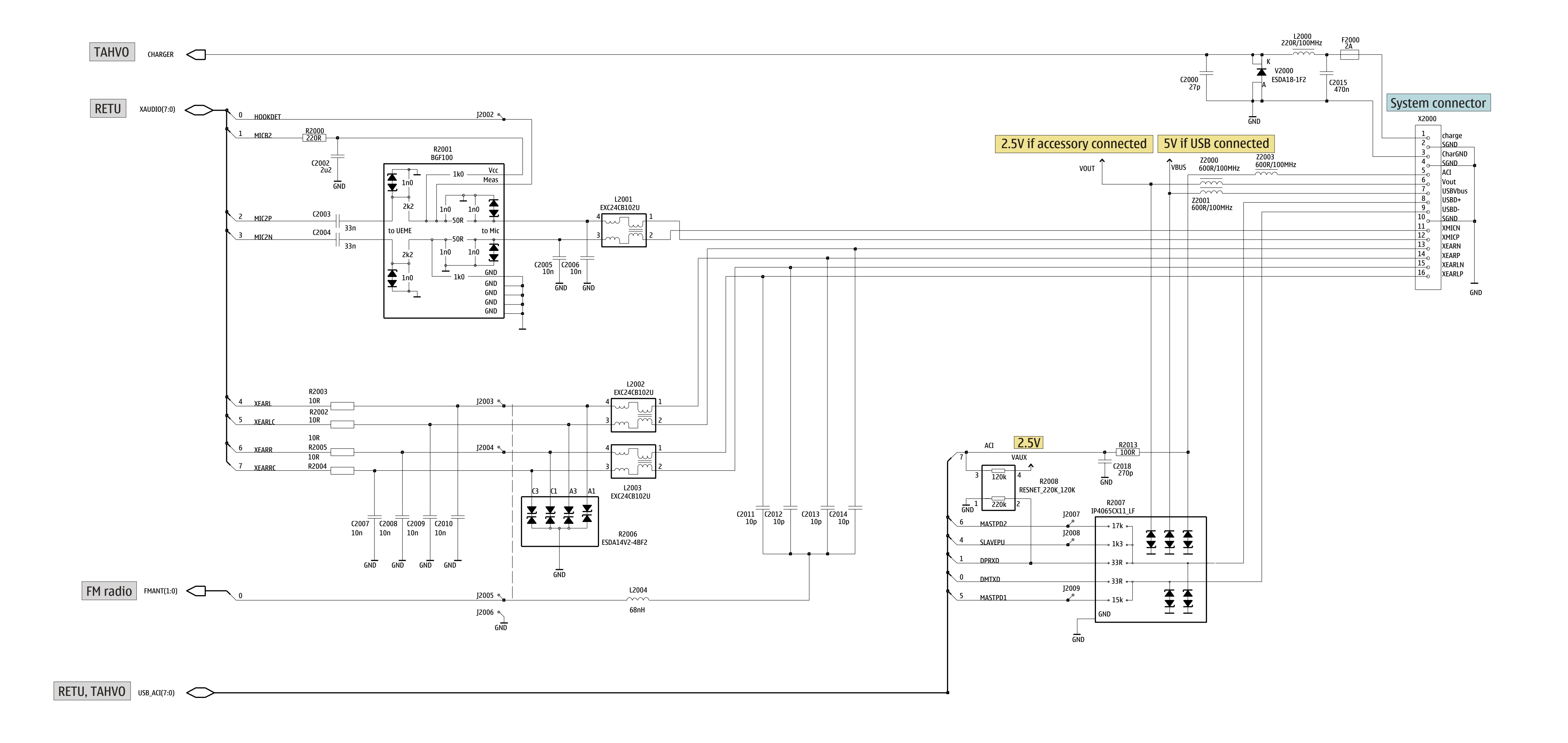
Nokia repair SW	: Phoenix version 2006.12.5.136
Oscilloscope	: Fluke PM 3380A/B
Spectrum Analyzer	: Advantest R3162 with an analog probe
RF-Generator / GSM Tester	: Rhode & Schwarz CMU 200
Multimeter	: Fluke 73 Series II

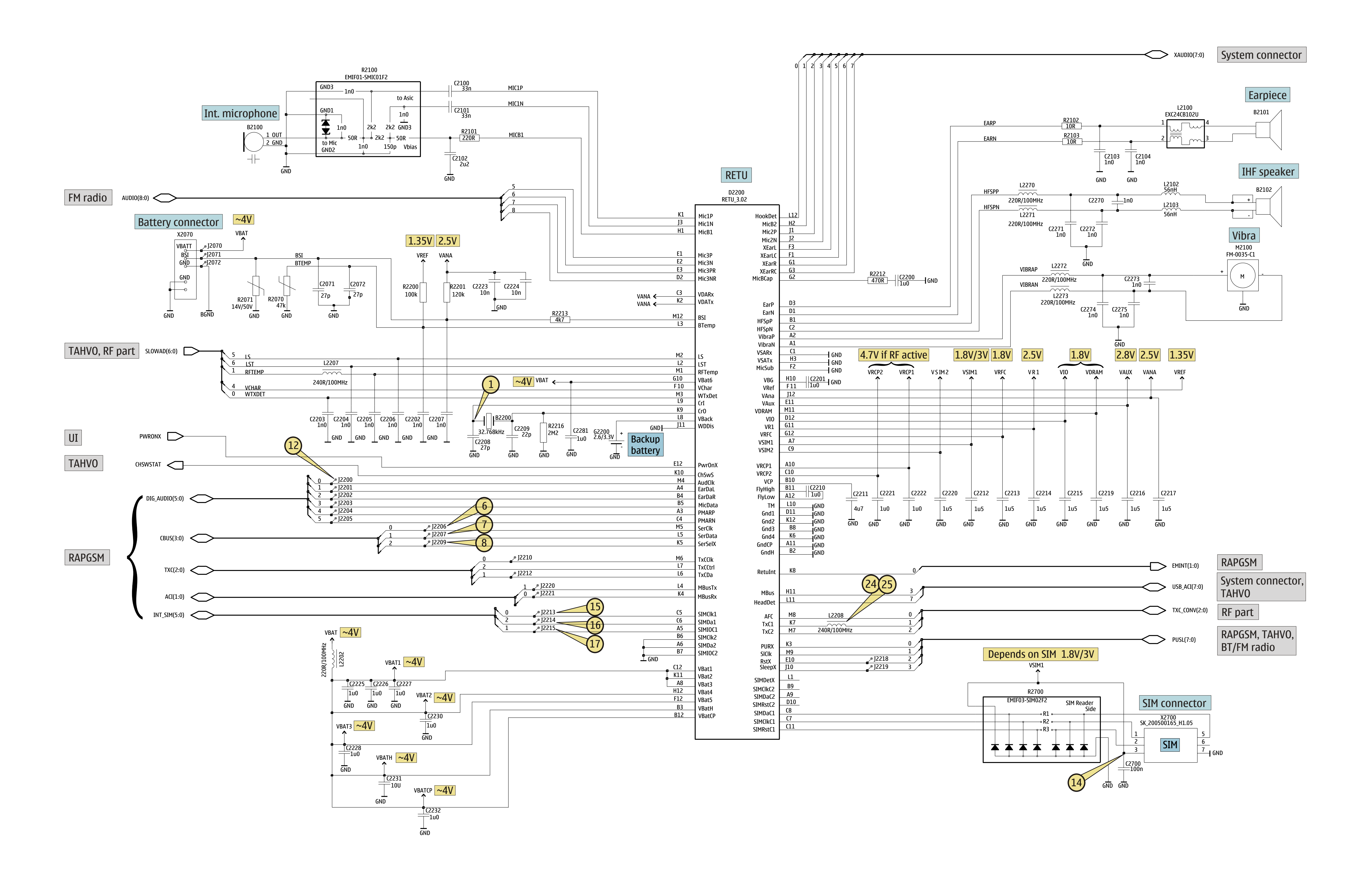


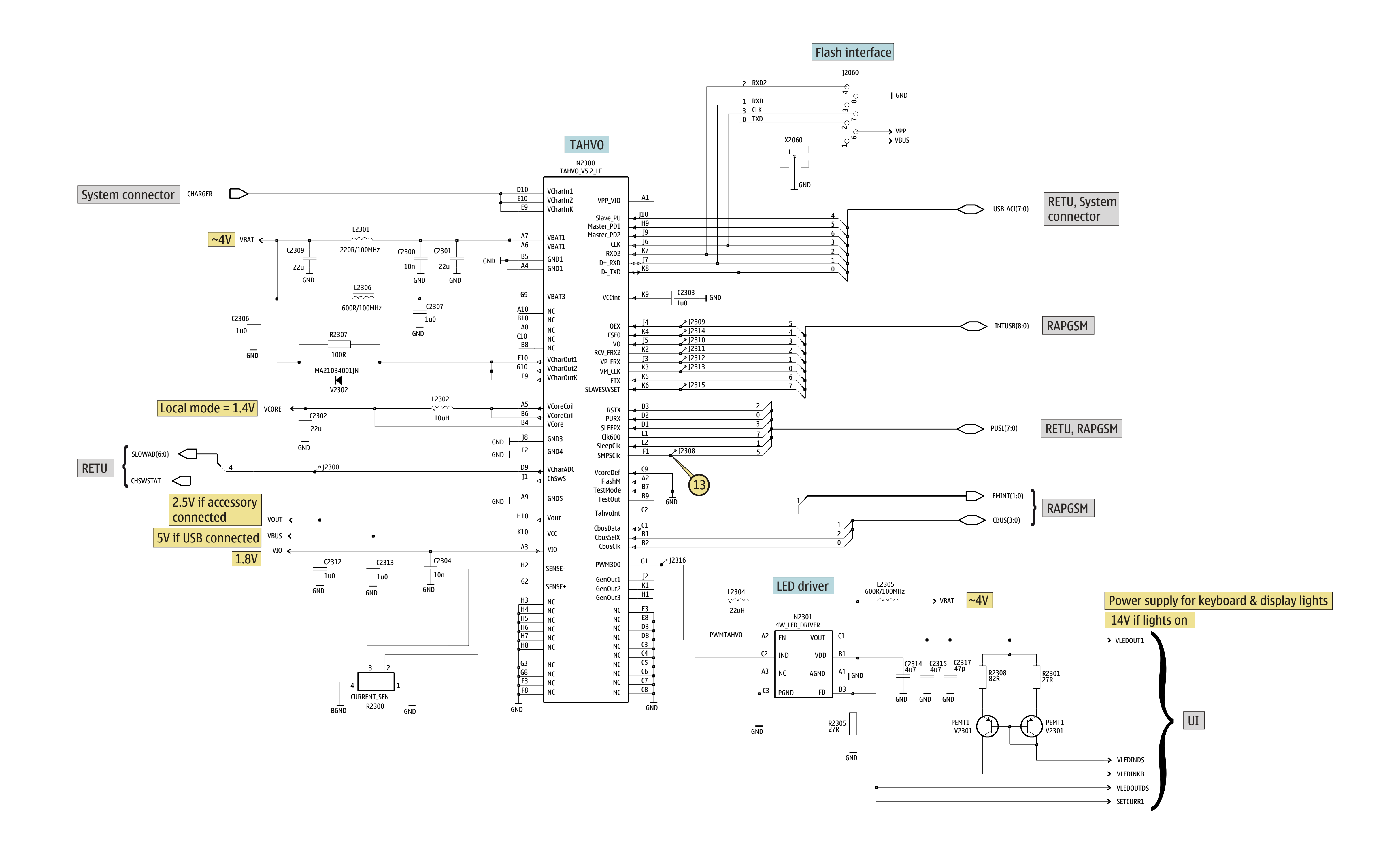
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While every endeavour has been made to ensure the accuracy of this document, some errors may exist. If the reader finds any errors, NOKIA shall be notified in writing.

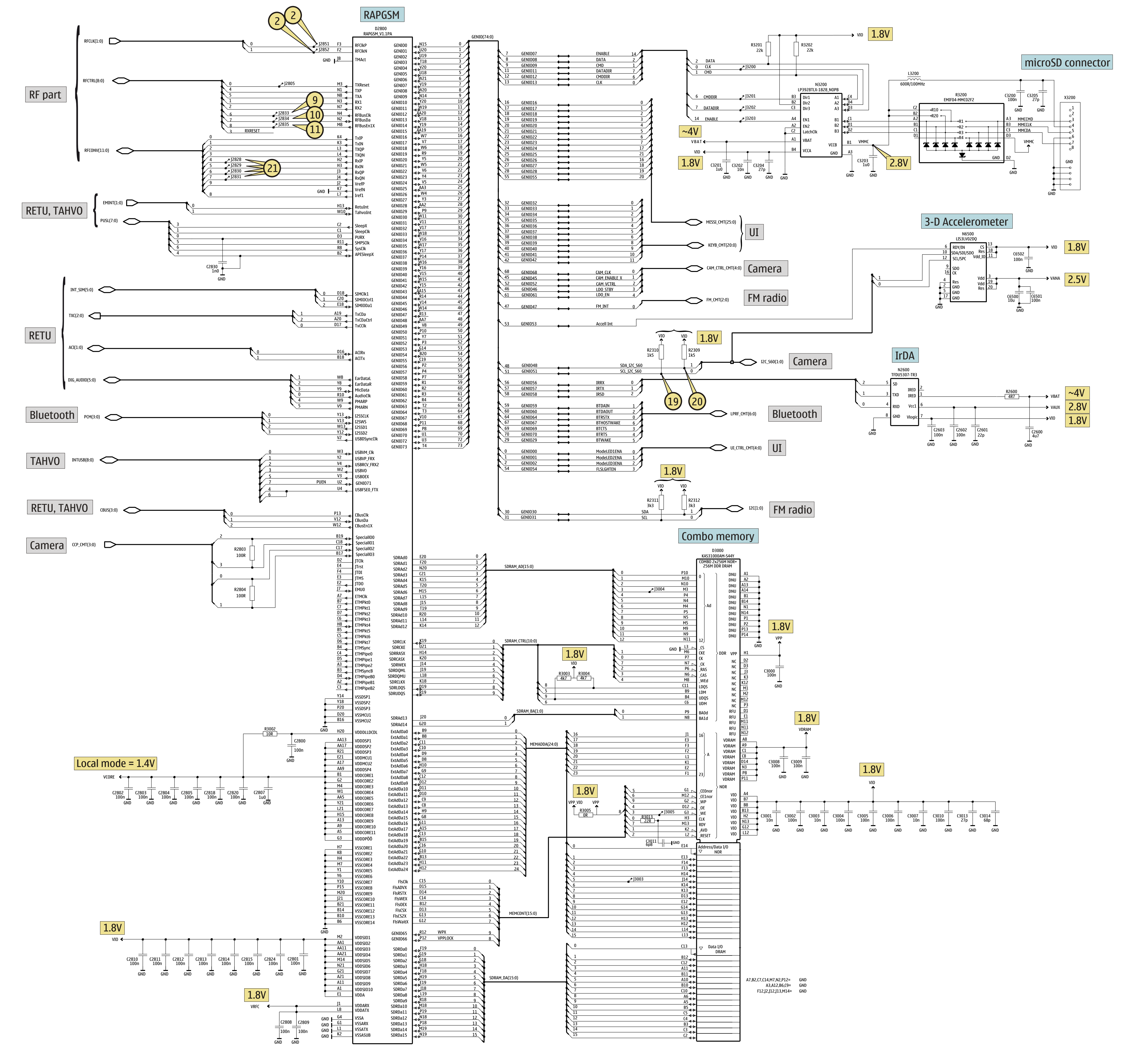
Please send E-Mail to: training.sace@nokia.com


TAHVO
CHARGER
RETU
XAUDIO(7:0)
HOOKDET
MIC82
MIC2P
MIC2N
XEARL
XEARLC
XEARR
XEARRC
R2000
220R
C2002
2u2
GND
R2001
BGF100
Vcc
Meas
to UEME
to Mic
L2001
EXC24CB102U
C2003
C2004
33n
C2005
10n
C2006
10n
L2002
EXC24CB102U
L2003
EXC24CB102U
R2006
ESDA14V2-4BF2
C2007
C2008
C2009
C2010
C2011
C2012
C2013
C2014
10p
J2002
J2003
J2004
J2005
J2006
FM radio
FMANT(1:0)
L2004
68nH
RETU, TAHVO
USB_ACI(7:0)
L2000
220R/100MHz
F2000
2A
V2000
ESDA18-1F2
C2000
27p
C2015
470n
System connector
X2000
2.5V if accessory connected
5V if USB connected
VOUT
VBUS
Z2000
600R/100MHz
Z2001
600R/100MHz
Z2003
600R/100MHz
charge
SGND
CharGND
SGND
ACI
Vout
USBVbus
USBD+
USBD-
SGND
XMICN
XMICP
XEARN
XEARP
XEARLN
XEARLP
ACI
2.5V
VAUX
R2008
RESNET_220K_120K
120k
220k
R2013
100R
C2018
270p
R2007
IP4065CX11_LF
MASTPD2
SLAVEPU
DPRXD
DMTXD
MASTPD1
J2007
J2008
J2009
17k
1k3
33R
33R
15k

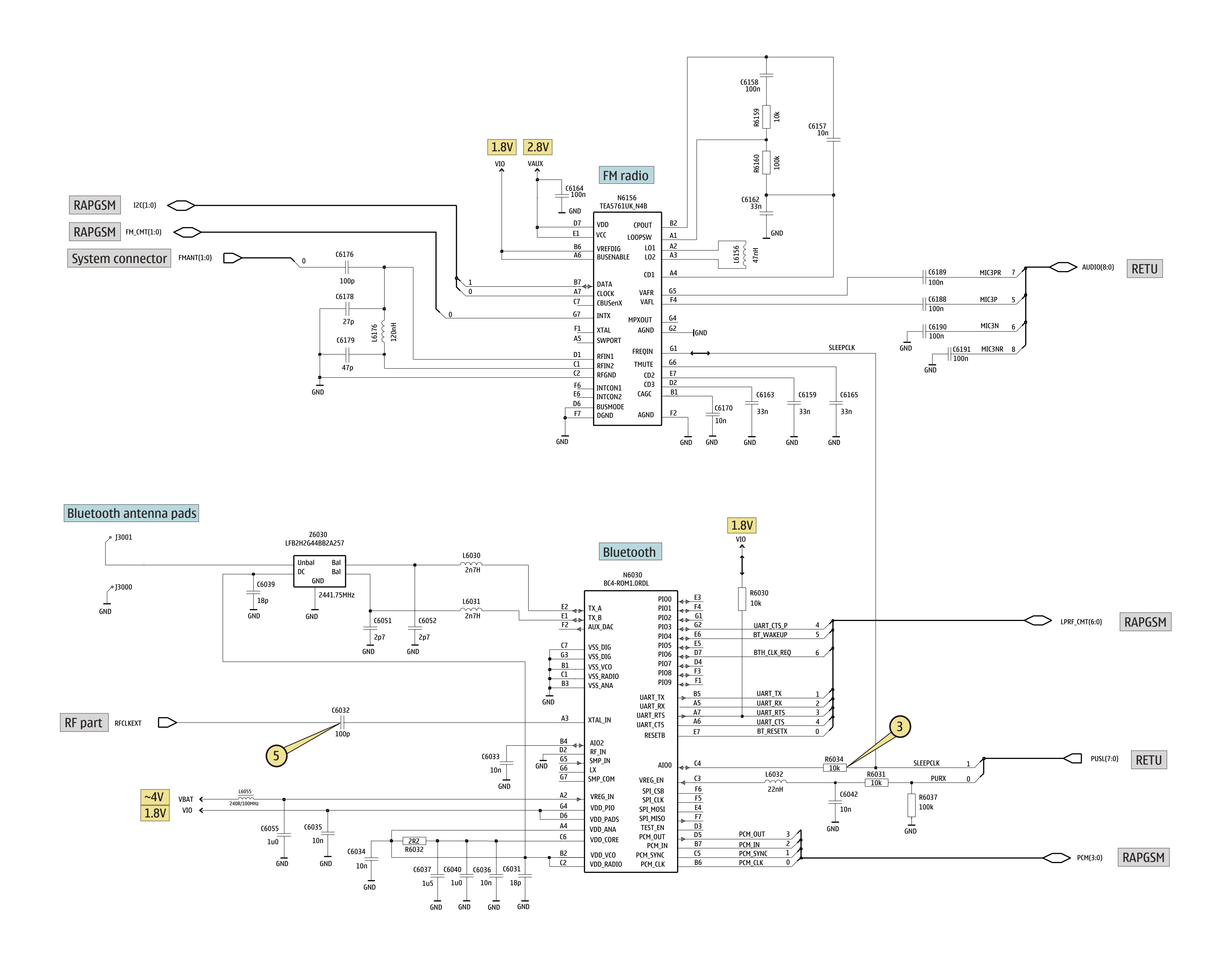

System connector
Earpiece
Int. microphone
IHF speaker
RETU
FM radio
Battery connector
~4V
1.35V
2.5V
Vibra
TAHVO, RF part
4.7V if RF active
1.8V/3V
1.8V
2.5V
1.8V
2.8V
2.5V
1.35V
UI
TAHVO
Backup battery
RAPGSM
RAPGSM
System connector, TAHVO
RF part
RAPGSM, TAHVO, BT/FM radio
Depends on SIM 1.8V/3V
SIM connector
SIM



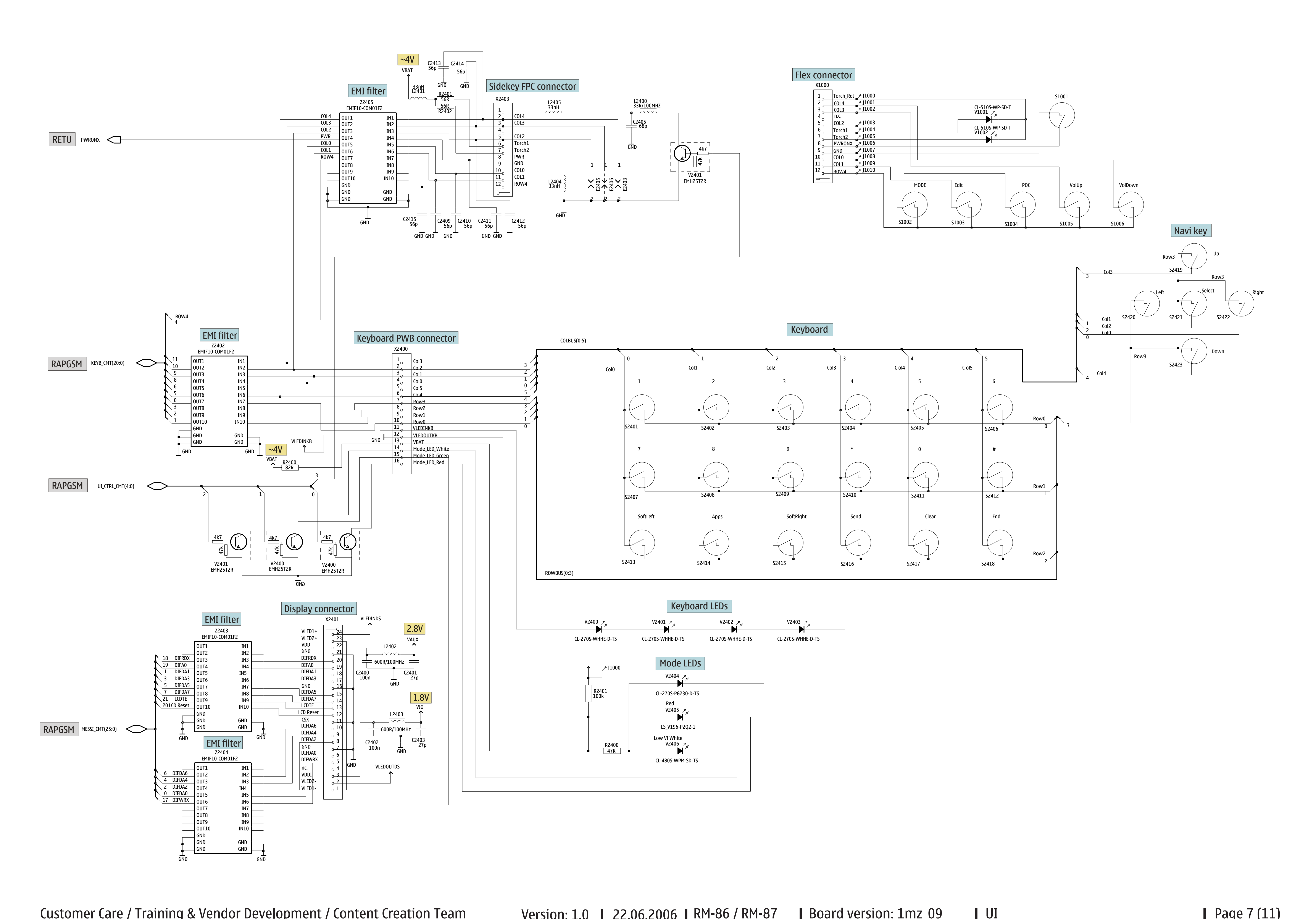
Flash interface
TAHVO
System connector
~4V
Local mode = 1.4V
RETU
2.5V if accessory connected
5V if USB connected
1.8V
RETU, System connector
RAPGSM
RETU, RAPGSM
RAPGSM
LED driver
~4V
Power supply for keyboard & display lights
14V if lights on
UI



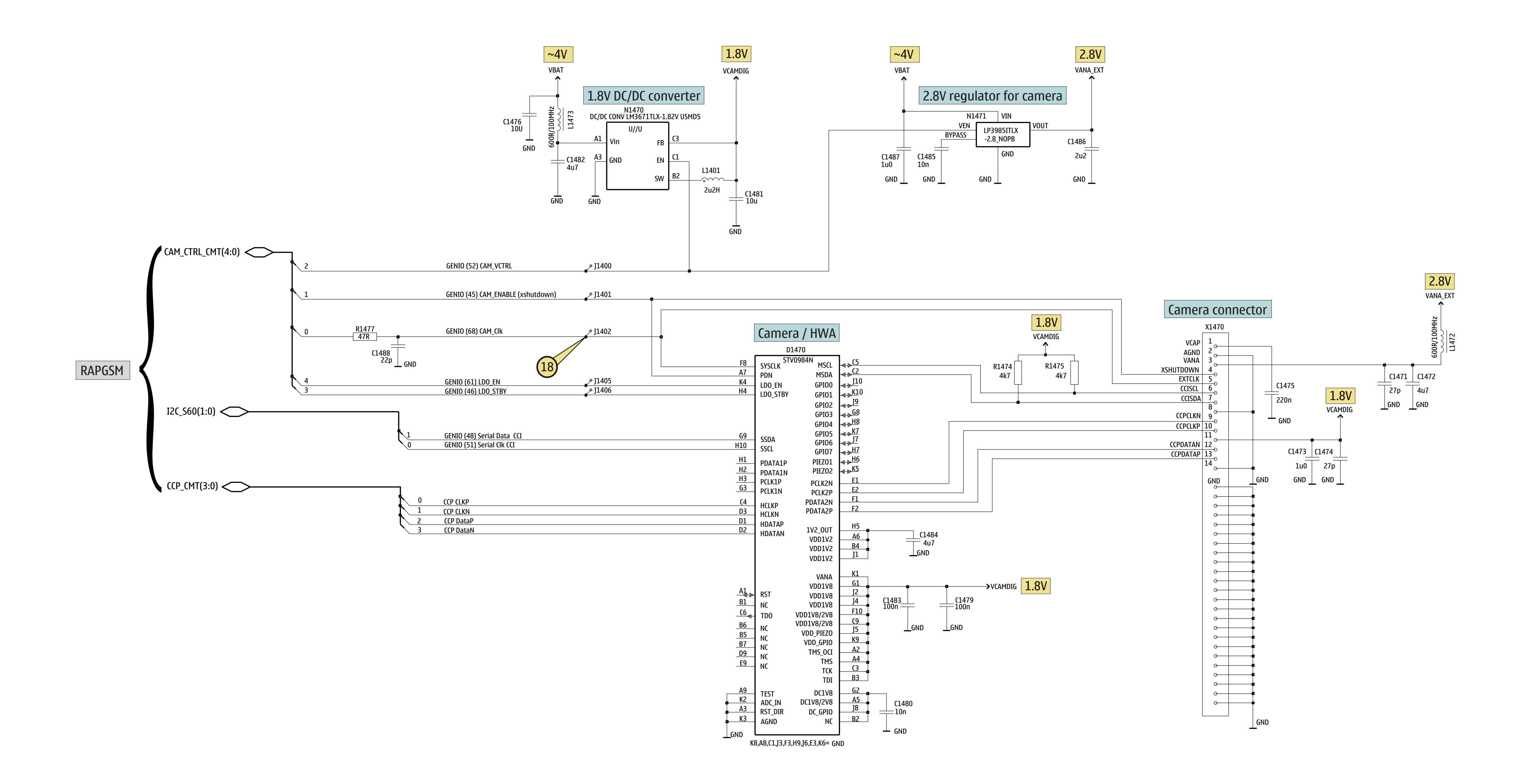
RAPGSM
microSD connector
RF part
RETU, TAHVO
RETU
Bluetooth
TAHVO
RETU, TAHVO
Camera
UI
Camera
FM radio
3-D Accelerometer
Camera
IrDA
Bluetooth
UI
FM radio
Combo memory
Local mode = 1.4V
1.8V
~4V
2.8V
2.5V

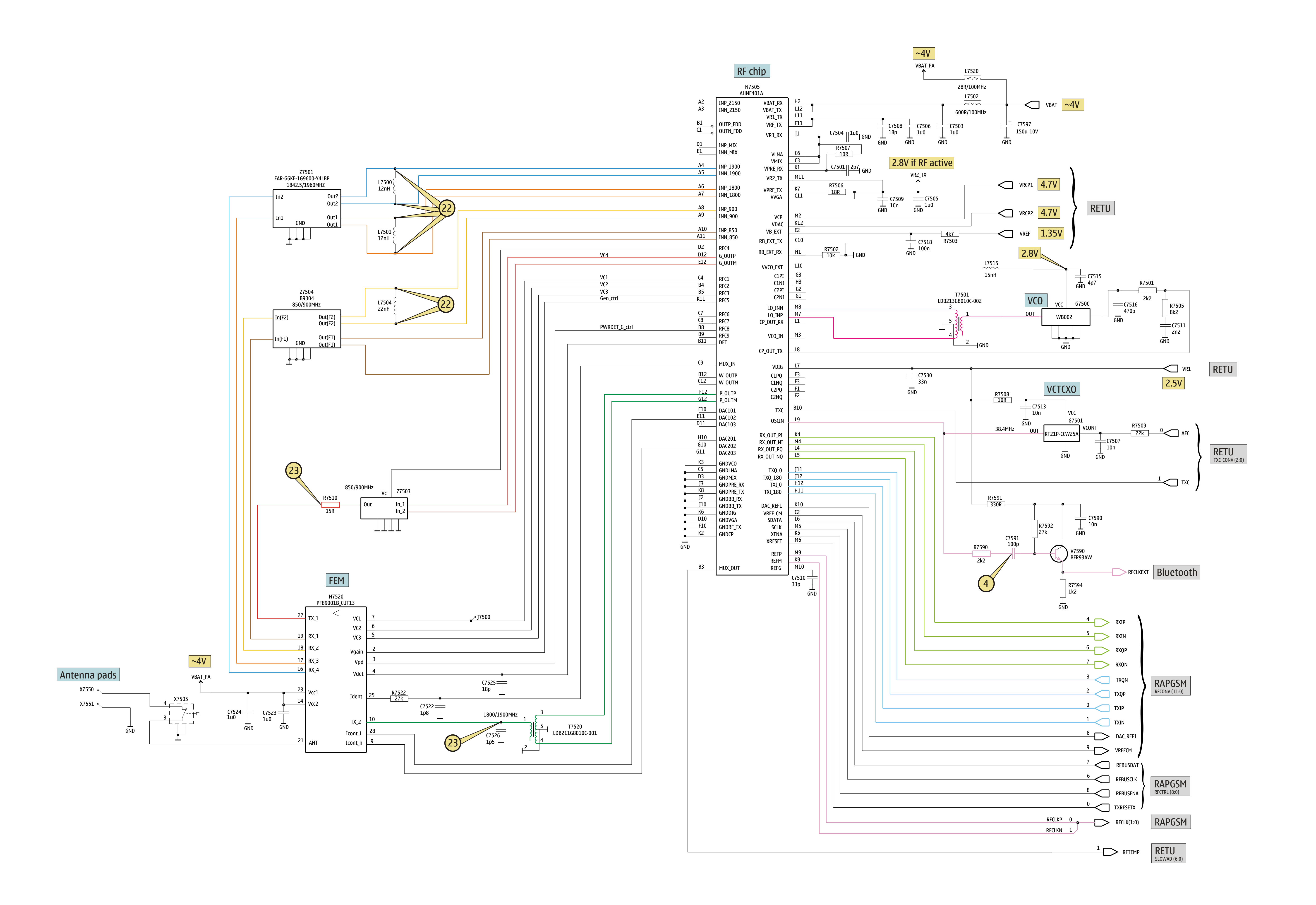


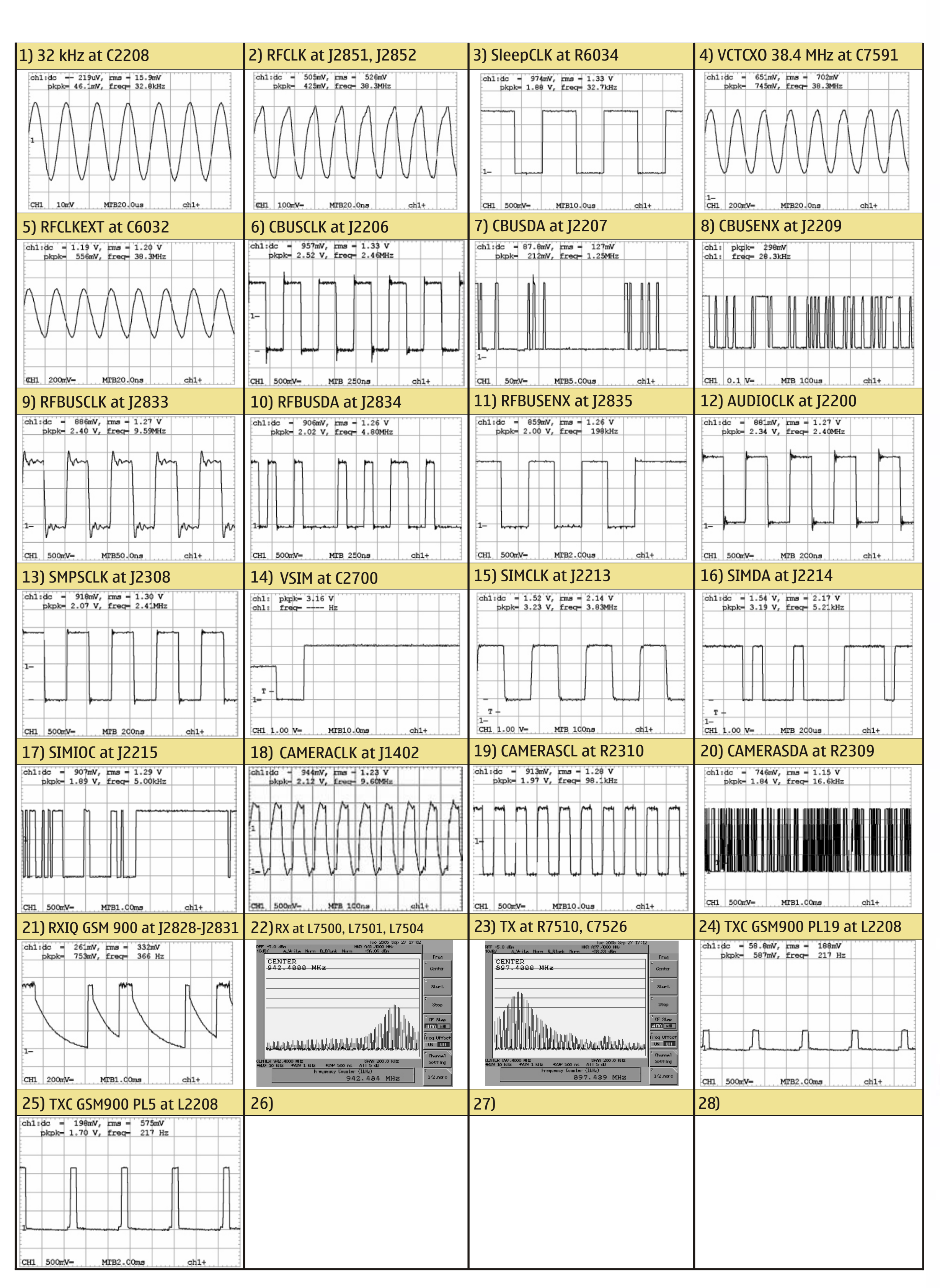
FM radio
Bluetooth
Bluetooth antenna pads
RAPGSM
System connector
RETU
RF part
1.8V
2.8V
~4V



RETU
PWRONX
EMI filter
Z2405
EMIF10-COM01F2
~4V
VBAT
Sidekey FPC connector
X2403
Flex connector
X1000
Navi key
Keyboard
Keyboard PWB connector
X2400
EMI filter
Z2402
EMIF10-COM01F2
RAPGSM
KEYB_CMT(20:0)
RAPGSM
UI_CTRL_CMT(4:0)
Display connector
X2401
EMI filter
Z2403
EMIF10-COM01F2
RAPGSM
MESSI_CMT(25:0)
EMI filter
Z2404
EMIF10-COM01F2
2.8V
VAUX
1.8V
VIO
Keyboard LEDs
Mode LEDs


1.8V DC/DC converter
2.8V regulator for camera
Camera / HWA
Camera connector
RAPGSM
CAM_CTRL_CMT(4:0)
I2C_S60(1:0)
CCP_CMT(3:0)
~4V
1.8V
2.8V
VBAT
VCAMDIG
VANA_EXT
N1470
DC/DC CONV LM3671TLX-1.82V USMD5
N1471
LP3985ITLX -2.8_NOPB
D1470
STV0984N
X1470
GENIO (52) CAM_VCTRL
GENIO (45) CAM_ENABLE (xshutdown)
GENIO (68) CAM_Clk
GENIO (61) LDO_EN
GENIO (46) LDO_STBY
GENIO (48) Serial Data CCI
GENIO (51) Serial Clk CCI
CCP CLKP
CCP CLKN
CCP DataP
CCP DataN
K8,A8,C1,J3,F3,H9,J6,E3,K6= GND


RF chip
N7505
AHNE401A
FEM
N7520
VCO
VCTCXO
RETU
RAPGSM
Bluetooth
Antenna pads
~4V
2.8V if RF active
4.7V
1.35V
2.8V
2.5V
Z7501
FAR-G6KE-1G9600-Y4LBP
1842.5/1960MHZ
Z7504
B9304
850/900MHz
Z7503
T7501
T7520
G7500
G7501
V7590
BFR93AW



VOUT 2.5V
VBUS 5V
VLEDOUT1 14V
VRCP1 4.7V
VRCP2 4.7V
VSIM2 1.8/3V
VSIM1 1.8V/3V
VRFC 1.8V
VAUX 2.8V
VIO 1.8V
VBAT 4V
VR1 2.5V
VREF 1.35V
VANA 2.5V
VDRAM 1.8V
VANA 2.8V
VCORE 1.4V
VMMC 2.8V
VBAT_PA 4V

B		C2214	Q7	C2802	J5	C6170	Q3	J2007	Q3	J3200	N2	N6500	P4	R6159	P3
B2200	R6	C2215	P7	C2803	M6	C6176	R3	J2008	Q3	J3201	M5	N7505	E5	R6160	Q3
C		C2216	P7	C2804	J6	C6178	R3	J2009	Q3	J3202	M4	N7520	E2	R7501	E6
C1471	G2	C2217	R7	C2805	J7	C6179	Q3	J2060	N6	J3203	M4	**R**		R7502	D5
C1472	G2	C2219	R7	C2807	J8	C6188	R4	J2070	H8	**L**		R1474	I2	R7503	F5
C1473	I3	C2220	P6	C2808	K8	C6189	R4	J2071	H8	L1401	K2	R1475	I2	R7505	E6
C1474	I4	C2221	P8	C2809	K8	C6190	R5	J2072	I8	L1472	L1	R1477	L6	R7506	E6
C1475	I4	C2222	P7	C2810	J6	C6191	R5	J2200	M6	L1473	L2	R2000	S5	R7507	D5
C1476	L2	C2223	P5	C2811	K5	C6500	O4	J2201	M7	L2000	S3	R2001	S5	R7508	E6
C1479	I3	C2224	Q5	C2812	M5	C6501	O4	J2202	M7	L2001	S5	R2002	S6	R7509	F6
C1480	I1	C2225	Q7	C2813	L8	C6502	P3	J2203	M6	L2002	S5	R2003	S6	R7510	F2
C1481	K2	C2226	P7	C2814	J8	C7501	D5	J2204	R5	L2003	S7	R2004	S6	R7522	F2
C1482	L2	C2227	P6	C2815	J5	C7503	F6	J2205	R6	L2004	S5	R2005	S6	R7590	M1
C1483	K2	C2228	Q7	C2818	L5	C7504	D5	J2206	O6	L2100	C7	R2006	S6	R7591	N2
C1484	I2	C2230	Q7	C2820	M5	C7505	F6	J2207	O6	L2102	C7	R2007	Q2	R7592	N2
C1485	M2	C2231	P5	C2824	L6	C7506	F6	J2209	O6	L2103	C7	R2008	Q2	R7594	N1
C1486	L2	C2232	P7	C2830	J8	C7507	F6	J2210	R6	L2202	Q8	R2013	Q3	**T**	
C1487	L3	C2270	Q5	C3000	M4	C7508	F6	J2212	M5	L2207	R5	R2070	R1	T7501	E7
C1488	L6	C2271	P5	C3001	M5	C7509	E6	J2213	Q4	L2208	R6	R2071	I8	T7520	D2
C2000	S3	C2272	Q5	C3002	M4	C7510	E6	J2214	Q4	L2270	P5	R2100	T7	**V**	
C2002	S4	C2273	P6	C3003	M5	C7511	E6	J2215	Q4	L2271	Q5	R2101	T7	V2000	S3
C2003	S4	C2274	P6	C3004	M4	C7513	F6	J2218	O6	L2272	P6	R2102	S7	V2301	O7
C2004	S4	C2275	P5	C3005	K3	C7515	D6	J2219	M8	L2273	P5	R2103	S7	V2302	M5
C2005	S5	C2281	Q8	C3006	M3	C7516	D6	J2220	R8	L2301	N5	R2200	R8	V2400	M3
C2006	S5	C2300	N6	C3007	K3	C7518	F5	J2221	Q8	L2302	O5	R2201	R7	V2401	M3
C2007	S6	C2301	N5	C3008	M4	C7522	F3	J2300	O6	L2304	N7	R2212	Q5	V7590	N2
C2008	S6	C2302	O5	C3009	M3	C7523	D2	J2308	O6	L2305	N7	R2213	R7	**X**	
C2009	S6	C2303	N7	C3010	M3	C7524	F3	J2309	O7	L2306	M6	R2216	R7	X1470	H4
C2010	S6	C2304	O6	C3011	J5	C7525	F1	J2310	O7	L2400	M2	R2301	O7	X2060	L3
C2011	S7	C2306	M5	C3013	K5	C7526	D2	J2311	O7	L2401	C7	R2305	O8	X2070	H6
C2012	S6	C2307	N6	C3014	K5	C7530	E6	J2312	O7	L2402	M4	R2307	N6	X2400	M7
C2013	S6	C2309	N5	C3200	M3	C7590	N2	J2313	O7	L2403	M4	R2308	P7	X2401	L4
C2014	S5	C2312	N6	C3201	M2	C7591	N2	J2314	O7	L2404	B8	R2309	N3	X2403	B7
C2015	S3	C2313	N7	C3202	M3	C7597	I5	J2315	O7	L2405	C7	R2310	M3	X2700	P6
C2018	Q2	C2314	O7	C3203	M2	**D**		J2316	O7	L3200	M3	R2311	Q4	X3200	P3
C2071	I8	C2315	O8	C3204	M3	D1470	J2	J2828	F6	L6030	O2	R2312	Q4	X7505	C2
C2072	R1	C2317	N8	C3205	M3	D2200	Q6	J2829	F6	L6031	O1	R2400	L7	**Z**	
C2100	T7	C2400	M4	C6031	N1	D2800	K6	J2830	F6	L6032	O1	R2401	B7	Z2000	R2
C2101	T7	C2401	M4	C6032	P2	D3000	K4	J2831	F7	L6156	Q4	R2402	B7	Z2001	R2
C2102	T7	C2402	M4	C6033	P2	**F**		J2833	G7	L6176	R3	R2600	Q8	Z2003	R3
C2103	S7	C2403	M4	C6034	O2	F2000	S2	J2834	G8	L7500	D4	R2700	Q5	Z2402	N4
C2104	S7	C2405	C7	C6035	P1	**G**		J2835	G7	L7501	D4	R2803	J6	Z2403	N3
C2200	Q5	C2409	C7	C6036	P2	G2200	L2	J2851	F6	L7502	F5	R2804	J6	Z2404	N4
C2201	Q7	C2410	B7	C6037	P2	G7500	D7	J2852	F5	L7504	E4	R3002	J5	Z2405	B7
C2202	R8	C2411	B7	C6038	O1	G7501	F7	J3000	H2	L7515	D6	R3003	L5	Z6030	N2
C2203	R6	C2412	B7	C6039	O2	**J**		J3001	H1	**M**		R3004	J5	Z7501	D3
C2204	R6	C2413	C7	C6051	O2	J1400	L2	J3003	J7	M2100	G6	R3005	O6	Z7503	F4
C2205	R5	C2414	C7	C6052	O2	J1401	J3	J3004	K3	**N**		R3013	J5	Z7504	E3
C2206	R6	C2415	C7	C6055	N1	J1402	J3	J3005	J4	N1470	K2	R3200	M1	Z7520	D3
C2207	R7	C2600	P8	C6157	Q4	J1405	L3	J3112	N6	N1471	L2	R3201	M3		
C2208	R6	C2601	N8	C6158	P4	J1406	L3	J3113	N5	N2300	O6	R3202	M3		
C2209	R6	C2602	N8	C6159	R4	J2002	S5	J3114	N5	N2301	O8	R6030	P2		
C2210	P7	C2603	N8	C6162	Q3	J2003	R6	J3115	N5	N2600	N8	R6031	O1		
C2211	P7	C2700	Q5	C6163	Q3	J2004	R6	J3116	N7	N3200	M2	R6032	P1		
C2212	P6	C2800	J5	C6164	R4	J2005	R5	J3117	N6	N6030	O2	R6034	O2		
C2213	Q7	C2801	K8	C6165	R4	J2006	R6	J3118	N5	N6156	Q4	R6037	N2		

